Tektronix

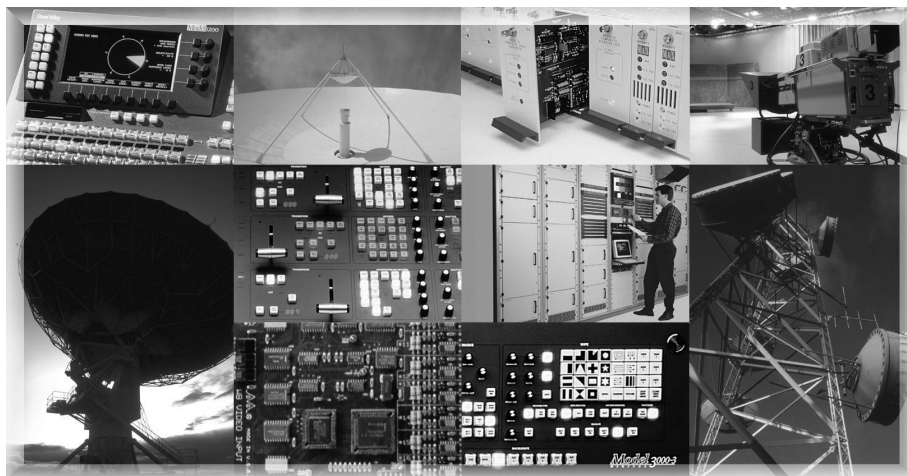# Grass Valley DPM-700/700CV
Digital Picture Manipulator

Ordering Guide

December 1997

Revision 1

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PRODUCT OVERVIEW

The DPM-700 Digital Picture Manipulator is a high-quality digital video effects processing system with full three-dimensional location and rotation. This compact effects system puts a powerful range of exciting visual manipulation in a very cost effective package.

The standard functions include the ability to change a picture's size and shape, variable expansion and compression, spin, skew; plus location and multi-axis rotation of moving or frozen video images. Many other useful modifiers can also be applied to images, such as false color, soft borders, mosaic, posterization, solarization, defocus, as well as variable motion paths. With "Easy Cube," a four sided cube can be built with just one pass, or a six sided cube in two passes.

The basic system consists of a single channel with an A/B input selector. Adding the second channel puts even more creative power into the system. The second channel can either process video, or a key signal associated with the first channel. The combiner provided with the second channel provides the ability to control channel priorities, dissolve between channels, and modify shadow densities. The cost of ordering or adding the second channel with the combiner is surprisingly low. The standard Global channel defines the location of a third axis in 3-D space which interacts with the position and motion of the two processing channels.

Two former options are now included with all systems. Page Turn creates realistic looking page turns. Variable bend radius and 360 degree rotation (requires two channels or two passes) capability is included. TrailBlazer Enhanced Recursive Memory creates drop shadows, enhanced star trails, decaying trails, still-store montage effects, defocus trails, and chroma shift trails.

With Key-Layer, the DPM-700/ 700CV video/key can appear either upstream or downstream of a production switcher. The standard linear analog downstream keyer has key invert, matte fill, and both linear and luminance keying. DSK capability adds another entire layer of effects to the production process. Effects include key dissolve, fade-to-black, and internal matte or external background, and of course on two channel systems, the second channel can be used as an external key signal. Transformed effects can be keyed over an external source such as the Program Out of a production switcher.

A sequence of effects can be combined into intricate key frame effects (programmed motion paths) on each channel. Multiple motion paths can be created with Smooth, S-Linear, Linear, or TCB (Tension, Continuity, Bias) movement. The E-MEM Effects Memory System saves effects that have been created. For even more storage capacity, you can use the standard 3 1/2" floppy drive system to save effects to disk. Sophisticated effects can be put into productions right away with the standard effects disk provided with the system. While the basic system is very powerful with many standard features, there are options available that will extend the DPM-700/ 700CV's creative potential.

The DPM-700 is set-up to easily integrate into a variety of production environments. 10x1 analog Input Selectors (one per channel) can be applied to the A input and fully controlled through the DPM-700/700CV control panel. These input routers are available in composite format. The DPM-700/ 700CV can also link into the AUX buses of Grass Valley 200/250/ 1000/1200 switchers, and work with the switcher E-MEM registers. There is an eight input/two output GPI and a terminal interface to display timelines and effects parameters.

One of the most valuable features of the DPM-700/700CV is that it can be ordered configured for a variety of different formats, making it easy to match a variety of input standards. The basic DPM-700/ 700CV model number indicates which format the system is configured for. Input formats supported include: NTSC composite analog, PAL composite analog, 525 line component digital, and 625 line component digital. All

formats provide both analog and digital outputs. This flexibility saves time and money that would otherwise have to be spent incorporating input and output transcoders into a system.

A full set of operation and service manuals comes with the system. In addition, the DPM-700 product line offers a full complement of spare components. These include spare modules, power supplies, extender boards, operators and maintenance manuals, operators videotape, and effects disks.

DPM-700

Single-channel Systems

All DPM-700 systems include Page Turn and Trailblazer effects, standard. All DPM-700 systems have a switchable power supply capable of 90-132V, 180-264V, 50/60Hz operation.

DPM-700 Composite Analog NTSC Input, Single Channel Video Effects System with Page Turn and Trail Blazer recursive effects

DPM-700CH1NA

Analog and digital composite NTSC output.

DPM-700 Composite Analog PAL Input, Single Channel Video Effects System with Page Turn and Trail Blazer recursive effects

DPM-700CH1PA

Analog and digital composite PAL output

DPM-700CV Component Digital 525 Line Input, Single Channel Video Effects System with Page Turn and Trail Blazer recursive memory

DPM700CV525 CH1D

Analog and digital component 525 line output.

DPM-700CV Component Digital 625 Line Input, Single Channel Video Effects System with Page Turn and Trail Blazer recursive memory

DPM700CV625 CH1D

Analog and digital component 625 line output.

Control Cable

A 30-meter cable is included with each system. The cables are assembled with 15-pin D connectors. Cables can be a maximum length of 100 meters. Specifications for building custom length cables are available from Customer Service.

OPTIONS

Second Channel Upgrades

This option provides a complete second channel for video or external key processing. It comes with a plug-in combiner submodule for advanced two-channel effects and an input board which determines the format of the second channel. NTSC or PAL, 525 or 625, standard must be specified to match the first channel.

Second Channel for Composite Analog NTSC input with Page Turn

DPM-700CH2NA

Compatible with DPM-700CH1NA

Second Channel for Composite Analog PAL input with Page Turn

DPM-700CH2PA

Compatible with DPM-700CH1PA.

Second Channel for Component Digital 525 Input with Page Turn

DPM700CV525 CH2D

Compatible with DPM-700CV525CH1D.

Second Channel for Component Digital 625 Input with DPM-705CV625

DPM700CV625 CH2D

Compatible with DPM-700CV625CH1D.

Performer Composite Input Selector (1 Per Channel)

PFR-RC

This is an external 10 X 1 video input selector with looping inputs. It is switchable for either 120V or 240V systems and works in NTSC or PAL. Although external, it can be fully controlled using the DPM-700 control panel. The Input Selector is connected to the DPM-700 by a special control cable that is included with every single channel system.

NOTE: Must specify 120V or 240V at time of order to ensure proper initial configuration.

Control Panel Rack Mount Adapter Kit

DPM-753

This option provides hardware to install the DPM-700 control panel into a standard 19" rack. Mounting the panel requires 8 rack units of space (14 inches). The option allows you to adjust the tilt and height of the panel in the rack.

Control Cable, Model 100/110/200/250/1000/1200 Switcher to DPM-700

DPM-755

This cable permits a Model 100/110/200/250/1000/1200 switcher to be interfaced to the DPM-700. The cable comes in three-meter length only.

Data Terminal with Cable

DPM-758

This option provides a status display terminal for connection to the TTY port.

Spare Service Manual Set, NTSC and PAL Composite Systems

DPM-761
or
DPM-761CV

This option includes one complete set of Service Manuals which apply to the composite (DPM-761) or component (DPM-761CV) systems. The DPM-700 is shipped with one set of manuals The Service Manuals encompass the options as well as the standard system.

Spare Operator's Handbook

DPM-762

This option provides a spare copy of the DPM-700 Operator's Handbook, which describes all system operations and includes tutorials and quick reference materials. The DPM-700 is shipped with one copy of the Handbook.

Spare Operator's Demo Videotape, VHS, NTSC

DPM-765N

The operator's videotape goes through each operational feature of the DPM-700 to demonstrate to the user how to fully utilize this creative and powerful digital effects system.

Spare Operator's Demo Videotape, VHS, PAL

DPM-765P

DPM-700
TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice.

System Performance

Frequency Response
300 Khz to 5 Mhz:	±0, -.25 dB

Signal to Noise Ratio
Excluding Quantizing:	> 58 dB
Including Quantizing:	> 44 dB
Differential Gain:	
	< 2% (10-90% APL)
Differential Phase:	< 2 degrees
SC/H Phase Error:	
	+ 5 degrees (10-90% APL)
K Pulse/Bar:	< 1%
Field Rate Tilt:	< 1%

Chrominance/Luminance Inequalities
Gain:	< .2 dB
Delay:	< 10ns

Power Requirements

Consumption:	310W
Voltage:	
	90-130,200-260V 50/60 Hz

Environmental Characteristics
Temperature Range at Frame:
    20-30° C, 68-86° F,
    30 minute warm-up

Temperature Range at Control Panel:
    0-40° C, 32-104° F

Relative Humidity: Up to 90%
                (non-condensing)

Dimensions

Control Panel
Height:	13.3 cm, 5.2"
Width:	43.2cm, 17.0"
Depth:	35.0 cm, 13.75"
Weight:	7kg, 15 lbs.

Electronics Frame
Height:	17.7cm, 7.0"
Width:	43.8cm, 17.25"
Depth:	56.8cm, 22.4"
Weight:	27.3kg, 60 lbs.
	(fully optioned)

Inputs
2 looping BNC switched A & B inputs on each channel for composite analog
Timing range of inputs:
        20us Delay to 35µs advance

1 Background Composite Analog Video Input- looping BNC

1 Timing Reference Color Black input- looping BNC

Outputs
2 Program Analog Composite Outputs- BNC Return Loss:< 34 dB, 15khz to 5 Mhz

Output timing range:
    90us   Delay to 162 µs advance

2 Analog Composite Clean Feed Output, BNC (video before keyer)

1 Parallel Composite Digital Clean Feed Output, 25-pin D connector (video before keyer)

1 Analog Key Output, BNC

1 Parallel Composite Digital Key Output, 25-pin D connector

Interfaces

GPI
8 GPI inputs, user-programmable
2 GPI outputs, user-programmable

All GPI, 25-pin D connector, Contact closure, 28V, 100ma

1 Serial RS-422 for editor control, 9-pin D connector

2 Serial RS-422 for switcher communication, 9-pin D connector
1 Serial RS-422 for device communication, 9-pin D connector

1 TTY/Input Router Interface link to   status terminal and10 x 1 Input selector routing switcher. 25 pin D connector.

DPM-700CV
TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice.

System Performance

Frequency Response
300 Khz to 5 Mhz: + 0, -.25 dB

Signal to Noise Ratio
Excluding Quantizing   > 58 dB
Including Quantizing   > 44 dB

Differential Gain
                    < 2% (10-90% APL)

Differential Phase: < 2 degrees
SC/H Phase Error:
            + 5 degrees (10-90% APL)
K Pulse/Bar: < 1%
Field Rate Tilt: < 1%

Chrominance/Luminance Inequalities
Gain: < .2 dB
Delay: < 10ns

Power Requirements
Consumption: 310W
Voltage: 90-130, 200-260V
                            50/60Hz

Environmental Characteristics
Temperature Range at Frame:
                    20-30° C, 68-86° F
                    30 minute warm-up

Temperature Range at Control Panel: 0-40° C, 32-104° F

Relative Humidity: Up to 90%
                        (non-condensing

Dimensions

Control Panel
Height: 13.3 cm, 5.2"
Width: 43.2cm, 17.0"
Depth: 35.0 cm, 13.75"
Weight: 7kg, 15 lbs.

Electronics Frame
Height: 17.7cm, 7.0"
Width: 43.8cm, 17.25"
Depth: 56.8cm, 22.4"
Weight: 27.3kg, 60 lbs.
                        (fully optioned)

Inputs
2 switched A & B inputs on each channel for parallel component digital, 25-pin D connectors

Timing range of inputs:
            20µs Delay to 35µs Advance

1 Background Composite Analog Video Input- looping BNC

1 Timing Reference Color Black input- looping BNC

Outputs
1 Program Analog Component Output- BNC(3X) Return Loss:< 34dB, 15khz-5 MHz

Output timing range:
        90µs Delay to 162 µs Advance

1 Analog Component Clean Feed Output, BNC(3X)(video before keyer)

1 Parallel Component Digital Clean Feed Output, 25-pin D connector (video before keyer)

1 Analog Key Output, BNC

1 Parallel Component Digital Key Output, 25-pin D connector

Interfaces

GPI
8 GPI inputs, user-programmable
2 GPI outputs, user-programmable

All GPI, 25-pin D connector, Contact closure, 28V, 10ma

1 Serial RS-422 for editor control, 9-pin D connector

2 Serial RS-422 for switcher communication, 9-pin D connector

1 Serial RS-422 for device communication, 9-pin D connector

1 TTY/Input Router Interface link to status terminal and 10 x 1 Input selector routing switcher. 25-pin D connector

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- In order to obtain service under this warranty, Customer must notify Tektronix of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product or part to the service center designated by Tektronix, with shipping charges prepaid by Customer. Tektronix shall pay for the return of the product to Customer.

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